

What is claimed is:

1. A projection display device comprising:  
a white light source;  
a condensing means for condensing light emitted from the light source;  
a color selection means for selectively passing through light of each color band of the light which has been condensed by the condensing means, in a predetermined order, by rotating a color wheel including of plural color filters that are placed in the form of disc and have respective colors;  
an illumination means for condensing the light which has passed through the color selection means and illuminating a spatial light modulator;  
a spatial light modulator for modulating the light incident from the illumination means; and  
a projection means for projecting the light modulated by the spatial light modulator onto a screen,  
said projection display device including a shading means for, when the size of the condensed spot has become larger caused by light emission of the light source, shading a part of light corresponding to the enlarged part of the condensed spot.

2. The projection display device of Claim 1 wherein,  
the shading means is a diaphragm having an opening of a predetermined size, through which the incident light is passed, and a width of the opening of the diaphragm with respect to the rotational direction of the color wheel is set to be equivalent to or smaller than a diameter of a condensed spot which is formed on the color wheel at an initial use of the light source.

3. The projection display device of Claim 1 wherein,  
the size of the light passing part of the shading means varies according to a wavelength of the light which has passed through the color selection means.
4. The projection display device of Claim 1 comprising:  
a light elimination means for partially eliminating light of a specific wavelength band, from the light which is incident on the light passing part of the shading means.
5. The projection display device of Claim 1 wherein,  
the shading means is placed on an emission side of the color selection means.
6. The projection display device of Claim 1 wherein,  
the shading means is placed at a 5 mm or smaller air gap apart from the color selection means.
7. The projection display device of Claim 1 wherein,  
the light source is an extra-high pressure mercury lamp.
8. The projection display device of Claim 1 wherein,  
the condensing means is an ellipsoidal mirror.
9. The projection display device of Claim 8 wherein,  
the color selection means has a light passing surface or light reflecting surface which is located in the vicinity of a long focus of the ellipsoidal mirror.

10. The projection display device of Claim 1 wherein,  
a plane that is orthogonal to an optical axis of the shading means is approximately  
circular in cross section.

11. The projection display device of Claim 10 wherein,  
the shading means is approximately columnar.

12. The projection display device of Claim 10 wherein,  
the shading means is approximately conical.